the total direct and indirect cost increase was approximately $120 per person per month.

SMOKING—Cost Studies

PSM1

A LONG TERM COST–EFFECTIVENESS ANALYSIS MODEL FOR SMOKING CESSATION IN MEXICO

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OBJECTIVES: Smoking is associated with several acute and chronic diseases in adult population that generate high medical costs in the Mexican Health System. The purpose of the study was to model the long term economic and health consequences of two smoking cessation interventions (SCI) in Mexican smokers attempting to quit from the health care payer's perspective. **METHODS:** A cost–effectiveness assessment was developed using a Markov modeling approach adapted to the Mexican smoker population. The model simulates costs and effectiveness outcomes in a twenty-year period (1-year cycle) and includes four potential comorbidities: chronic obstructive pulmonary disease, lung cancer, coronary heart disease and stroke. Comparators were: varenicline vs. nicotine patches, both in a twelve-week treatment. Transition probabilities were obtained according to Mexican epidemiologic data. Quit successful rates, smoking relapses rates and relative risk of smoking associated to the mentioned comorbidities were obtained from clinical trials published in the literature. Effectiveness measure was the number of life-years gained (LYG). Resource use and costs data was obtained from representative published Mexican institutional databases (only direct medical costs were included). Costs and effectiveness measures were discounted 3% annually. Probabilistic sensitivity analysis was performed and acceptability curves were constructed. **RESULTS:** Varenicline, in a 20-year period analysis, showed that could generate 132,304 more quitters (4.9%); 4905 less subjects with comorbidities (1.5%); 3333 deaths avoided; and 22,598 LYG in comparison to the treatment with nicotine patches. Also, varenicline was in the long term a cost-saving strategy (expected cost reduction of US$10.6 millions—CI 95% US$9.8–US$11.7 millions). Results were robust to Monte Carlo second order sensitivity analysis and acceptability curves showed the same results with a mean of 70% of certainty. **CONCLUSION:** Despite its higher cost in the Mexican market, varenicline was the SCI most cost–effective in the long term for the management of patients attempting to quit.

PSM2

THE COST UTILITY OF VARENICLINE IN SMOKING CESSATION HEALTH PROGRAMMES IN SWEDEN

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OBJECTIVES: To calculate incremental cost-utility ratios for varenicline as compared to bupropion in smoking cessation in Sweden for a follow-up period of 20 and 50 years, respectively. **METHODS:** The Benefits of Smoking Cessation on Outcomes (BENESCO) simulation model was employed in order to calculate costs and benefits accruing from smoking cessation. The BENESCO model simulates morbidity and mortality over time for a Swedish population of smokers. Four diseases were considered: chronic obstructive pulmonary disease, coronary heart disease, stroke, and lung cancer. According to available epidemiological evidence, these diseases cover most of the health problems associated with smoking. The advantage of smoking cessation, simulated by the BENESCO model, is the decreased incidence of the diseases considered. The benefits of smoking cessation were simulated for a male and female cohort, respectively. In addition, the BENESCO model was extended in order to include the indirect effects of smoking cessation on production and consumption in the economy. All calculations were performed in 2003 Swedish prices, assuming that 25% of the smokers in each age-group make one attempt to quit smoking at the outset of the simulation. **RESULTS:** Including indirect effects on production, the incremental costs per QALY gained were €2062 for men and €1196 for women over 20 years of follow-up and €14,783 for men and €14,252 for women over 50 years of follow-up, compared with bupropion. Including only direct effects on health care costs, smoking cessation using varenicline was cost-saving compared to bupropion treatment. Sensitivity analysis indicated that the results are robust. Variation of treatment efficiency and intervention cost, respectively, had a larger effect on cost per QALY gained than other variables. **CONCLUSION:** Based on this model, the estimated costs per QALY gained demonstrated that smoking cessation intervention using varenicline was among the most cost effective, life-saving medical treatments.

SMOKING—Methods & Concepts

PSM3

ESTIMATING THE INCIDENCE AND PREVALENCE OF SMOKING RELATED MORBIDITIES USING PROXY VALUES

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OBJECTIVES: To estimate the incidence and prevalence of the most burdensome smoking related morbidities in the US population as part of the Benefits of Smoking Cessation on Outcomes (BENESCO) model. **METHODS:** We have developed a micro-simulation Markov model to estimate the outcomes and costs of a hypothetical cohort of US current smokers, a proportion of whom (25%) will make a single attempt to quit smoking in the first year of a lifetime model. The BENESCO model estimates the incidence and prevalence of smoking related diseases by using the relative risks for mortality of the diseases as a proxy. The hazard ratios from the Cancer Prevention Study II (Thun 2000) were used as the basis for the required transformations. The incidence and prevalence of the following smoking related diseases were included in the model: lung cancer, chronic obstructive pulmonary disease (COPD), coronary heart disease (CHD), stroke and asthma exacerbations (attributed to smoking). Although the model includes smokers aged 18 years and older, no excess events were assumed to occur before the age of 35. **RESULTS:** Of the morbidities modelled, COPD was found as the most prevalent [peak estimates of individuals affected at model entry point] disease among smokers [2.89 million], followed by CHD [1.8 million], stroke [449,991], asthma exacerbations [395,829] and lung cancer [68,348]. Incidence rates at model entry followed a similar pattern to prevalence. The morbidities, which were modelled, were more prevalent overall in female smokers than their male counterparts. **CONCLUSION:** The estimates of the incidence and prevalence of smoking related diseases in the US population rely on methodology, which has been used elsewhere in published, validated models (Orme 2001, Hoogendoorn 2003) and use underlying hazard ratios from a large, independent US public health study. As such it could be expected that the external validity of the estimates in the BENESCO model is acceptable.